

How does a computer work?

LECTURE
SUMMARY

PRE-PROGRAMMING

Covered in this lecture:

How computers do what they do

- ▶ Without humans to operate the computers, they're just dumb machines that don't do anything
- ▶ By giving them specific instructions and commands, humans are communicating with the Central Processing Unit (CPU), the core of the computer, where the problem gets solved
- ▶ CPUs = tiny silicon boxes attached to the motherboard
- ▶ There are only two companies that make CPUs for personal computers: Intel and AMD
- ▶ Within these squares there are thousands of transistors that are microns in diameter
- A transistor is a wire that can transfer electricity
- The smallest CPU transistor is 0.05 microns

- A processor is like a small calculator. It transfers electricity in circles, which we call a clock, and is measured in MIPS (Millions of Instructions Per Second)
- ▶ Computers have permanent and temporary memory
- Permanent memory is build in the form of a hard drive which stores your files
- Temporary memory is called RAM (Random Access Memory), and here the information is stored just for the duration of the program you're running

See you next lecture!